



U.S. Department
Of Transportation
Pipeline and
Hazardous Materials
Safety Administration

820 Bear Tavern Road, Suite 103
West Trenton, NJ 08628
609.989.2171

**NOTICE OF PROBABLE VIOLATION
PROPOSED CIVIL PENALTY
and
PROPOSED COMPLIANCE ORDER**

UPS OVERNIGHT DELIVERY

April 4, 2013

Mr. Carlos Munguia
Vice President of Operations & Engineering
Kinder Morgan Liquids Terminals, LLC
8500 W 68th Street
Argo, IL 60501

CPF 1-2013-5004

Dear Mr. Munguia,

On March 15, 2011, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), pursuant to Chapter 601 of 49 United States Code, initiated an investigation of an accident that occurred on March 14, 2011, at Kinder Morgan Liquids Terminals, LLC's (Kinder Morgan) facility in Carteret, New Jersey (Carteret Terminal). The accident involved personal injury, a petroleum release, and property damage totaling approximately \$1.3 million dollars (Accident).

The Carteret Terminal is a major petroleum storage and transfer facility, covering 200+ acres with over 300 petroleum and chemical storage tanks. The facility receives hazardous liquid products from Colonial Pipeline Company's Line L6 and ships petroleum products out to various points.

On the day of the Accident, three separate activities were ongoing at the Carteret Terminal. First, an independent contractor team (Hot Work Crew) was performing "hot work" repairs on an empty pipe connected to the GANJ Manifold, a distribution point with a header and numerous valves and located at the end of the incoming Colonial Line L6. As part of that work, the contractor was using an oxy-acetylene torch to cut a hole in the pipe. The team consisted of four workers and a fire watchman. Approximately 15 to 20 feet away, a second crew of two Kinder Morgan employees (Valve Work Crew)

was repairing a butterfly valve on Colonial's no-lead gasoline line (NL Valve) on the same GANJ Manifold. The purpose of the repair was to modify the NL Valve by extending the hand wheel on the valve to make the wheel more accessible to operate.

Meanwhile, the Carteret Terminal was in the process of receiving a large shipment of unleaded gasoline from Colonial's Line L6 through the GANJ Manifold, where both crews were working. The gasoline was being transferred to an above-ground storage tank through the NL Valve. The Valve Work Crew was aware that gasoline was passing through the NL Valve on the "active" L6 line when it began its repair work.

When the Valve Work Crew loosened the NL Valve gear head assembly, this caused the NL Valve to rotate from fully open to fully closed. The sudden closure of the NL Valve caused a pressure surge on Line L6. The surge separated the flanges on two adjacent valves on the GANJ Manifold, which allowed gasoline to escape and to soak the area around the GANJ Manifold and a nearby access road. The flames from the Hot Work Crew's torch ignited vapors from the gasoline spray and caused a fire to consume the area. The seven workers at the scene immediately fled, with one individual sustaining an ankle injury. The electric power line above the GANJ Manifold melted, a parked vehicle was severely damaged, and an estimated 23 barrels of product spilled. The Carteret Terminal suffered major damage, which Kinder Morgan estimated at approximately \$1.3 million.

Shortly after the incident occurred on March 14, Kinder Morgan called the National Response Center (NRC) to file a report. Following the NRC call, Kinder Morgan filed an Accident Report with PHMSA.

As a result of PHMSA's investigation, it appears that Kinder Morgan committed certain violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations Part 195, as follows:

1. § 195.402 Procedural manual for operations, maintenance, and emergencies.

(a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted. . .

(c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations:

(1) . . .

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

Kinder Morgan failed to follow its manual of written procedures for ensuring safety during maintenance and normal operations. Specifically, Kinder Morgan failed to follow a written procedure in its Operations & Maintenance Manual (O&M Manual), known as *T-O&M 103 Safety Permits*, which required company personnel to secure a "Safe Work Permit" when performing any work on pipeline equipment (provided the job did not require a different type of safety permit). Kinder Morgan's Valve Work Crew failed to secure a Safe Work Permit for the NL Valve repair project.

The stated purpose of *T-O&M 103* is to utilize safety permits to ensure that work areas are safe and that "key personnel" fully plan for and communicate with each other about any work being performed. Prior to the Accident, Kinder Morgan personnel failed to follow various provisions in *T-O&M 103*, including

documenting the scope of the NL Valve repair project, documenting and ensuring that “key personnel [had] planned and communicated all aspects of the job,” documenting “that the area and equipment have been prepared and deemed safe to work on or near,” and using the permit process as a “field safety checklist” that might include “special precaution such as [personal protective equipment], health hazards, lockout/tagout, etc.”

Kinder Morgan’s own post-accident investigation (Internal Report) concluded that the two members of the Valve Work Crew had attended a meeting on the morning of March 14, prior to the Accident, to discuss modifying the work order for the NL Valve project. However, when an OPS inspector later requested documentation reflecting the purpose or scope of the meeting, Kinder Morgan was unable to provide any meeting notes, attendance sheet, or other documentary evidence showing that key personnel had actually attended the meeting or that the meeting met the requirements of *T-O&M 103*.

According to the Internal Report, the Accident was the result of several causes, including the failure of company maintenance personnel to “follow the established maintenance practices of communicating with operations before and after a job...” If Kinder Morgan staff had secured a Safe Work Permit and followed the procedures in *T-O&M 103*, it is likely the Valve Work Crew would either have been prohibited from working on the active NL line or been instructed to take other precautions to conduct the repair in a safe manner.

2. § 195.402 Procedural manual for operations, maintenance, and emergencies.

(a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.

(c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations:

(1) ...

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

Kinder Morgan failed to follow its manual of written procedures for ensuring safety during maintenance and normal operations. Specifically, Kinder Morgan failed to follow a written procedure in its O&M Manual designed to protect personnel from unexpected startup or energy releases during maintenance or repair projects. Under this O&M Manual procedure, known as *T-O&M 152 Lockout and Tagout*, Kinder Morgan personnel were required to lockout and tagout “any energy isolating device when performing maintenance or servicing a machine or piece of equipment.”

T-O&M 152 defines an energy isolating device as “[a] mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: . . . a valve.” The procedure requires that each individual who may be exposed to unexpected startup and energy releases during a work project shall apply the necessary locks and tags to all isolating devices. The purpose of the procedure is to ensure that all necessary equipment, including valves, are closed prior to starting maintenance or repair work to prevent pressure surges, accidents or other damage.

Kinder Morgan violated *T-O&M 152* on the date of the Accident by failing to ensure that a knowledgeable Kinder Morgan employee familiar with the GANJ Manifold had identified the scope of the NL Valve project, had surveyed the area, and had identified all energy-isolating devices that needed lockout/tagout. Further, Kinder Morgan personnel failed to actually lock out any equipment upstream of the NL Valve and to affix an appropriate tag or tags showing that the device(s) had been locked out and warning that the device(s) should not be operated. In a post-accident interview with OPS, a Kinder Morgan manager confirmed that the Valve Work Crew did not follow the company's lockout/tagout procedure.

The failure of Kinder Morgan personnel to lockout/tagout the pipeline upstream of the NL Valve allowed product to flow through the valves on the GANJ Manifold during the NL Valve project. If the upstream line(s) had been properly locked and tagged, the pressure surge could have been avoided and the accident prevented. According to the company's own Internal Report, "the incident was caused by failure to follow the lock-out/tag-out procedure. . . ."

3. § 195.402 Procedural manual for operations, maintenance, and emergencies.

(a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.

(c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations:

(1) . . .

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

Kinder Morgan failed to prepare and follow a procedure in its manual of written procedures for conducting normal operation and maintenance activities. Specifically, the company failed to have a procedure for conducting valve repairs safely, as required under § 195.422(a).

Prior to the Accident, Kinder Morgan had issued work order # 115684 for the Valve Work Crew to install an extension on the wheel handle of the NL Valve on the GANJ Manifold, but did not have any written procedure regarding how such maintenance or repair should be performed in a safe manner and so as to prevent damage to persons or property. As part of the post-accident investigation, a PHMSA representative requested that Kinder Morgan provide a copy of the procedures used by the company to perform the job on the NL Valve. The Kinder Morgan employee explained that the company's procedure for valve repair was incorporated into its O&M Manual as *T-O&M 301, Inspecting and Servicing Pipeline Valves (Revised 9/27/10)* and provided a copy.

This procedure, however, does not address maintenance or repairs or provide instructions as to how they should be performed on a manually operated valve, such as the NL Valve, to ensure the work is performed in a safe manner. For example, *T-O&M 301* does not address whether or how valve maintenance or repairs could be made safely on an active line. In its Internal Report, Kinder Morgan acknowledged that it was company policy to perform repair work only on inactive lines, but such policy was not included in its manual of written procedures.

If Kinder Morgan had prepared and implemented an adequate written procedure on maintaining or repairing valves safely and so as to prevent damage to persons or property, it is likely the company would not have conducted the NL Valve work on an active line and the accident would not have occurred.

4. **§ 195.406 Maximum operating pressure.**

(a) ...

(b) No operator may permit the pressure in a pipeline during surges or other variations from normal operations to exceed 110 percent of the operating pressure limit established under paragraph (a) of this section. Each operator must provide adequate controls and protective equipment to control the pressure within this limit.

Kinder Morgan permitted the pressure in its pipeline, during surges or other variations from normal operations, to exceed 110 percent of the currently established maximum operating pressure (MOP) of 285 psig.

At the time of the Accident, the Carteret Terminal was receiving a scheduled shipment of unleaded gasoline shipment through Line L6. The NL Valve on the line was open, but two nearby upstream manifold valves (identified as Valves G1 and G2) and the downstream Valve G3 were all closed. When the Valve Work Crew loosened the NL Valve gear head assembly, this caused the NL Valve to rotate from fully open to fully closed. The sudden closing of the NL Valve resulted in a pressure surge and caused the flanges on the upstream Valves G1 and G2 to separate and spray gasoline around the GANJ Manifold area and over a nearby access road. Pressures at the GANJ Manifold increased to over 523 psig, almost double the established maximum operating pressure, and caused the flanges to separate and the Accident to occur.

Kinder Morgan further violated § 195.406(b) by failing to provide adequate controls and protective equipment to control the pressure on Line L6. In a post-accident analysis of the overpressure protection system at the Carteret Terminal, Kinder Morgan acknowledged that there was no pressure relief system connected to the GANJ Manifold and that over-pressurization protection on the line was “not up to industry standard.” The lack of adequate overpressure controls on Line L6 allowed the flanges on Valves G1 and G2 to separate due to the pressure surge and served as a contributing cause of the Accident.

5. **§ 195.422 Pipeline repairs.**

(a) Each operator shall, in repairing its pipeline systems, insure that the repairs are made in a safe manner and are made so as to prevent damage to persons or property.

Kinder Morgan failed to ensure that the repairs made to the NL Valve at the GANJ Manifold were performed in a safe manner and so as to prevent damage to persons or property. On March 14, 2011, the Valve Work Crew conducted a repair of the NL Valve on the GANJ Manifold, as described above. The repairs were not made in a safe manner because, in addition to the failure to have and then follow the various written procedures described above, the Valve Work Crew continued with its maintenance work even after the crew became aware that the L6 Line was in operation, was under pressure, and was receiving a shipment of unleaded gasoline through the valve that was undergoing repair. It was unsafe to conduct a repair of the Velan butterfly valve on Line L6 because the manufacturer's maintenance instructions state that pressure should be relieved from both sides of the valve before conducting a repair involving the valve actuator. The Valve Work Crew was apparently unaware that removing the valve actuator during flow conditions could cause the valve to close suddenly.

In addition, the Valve Work Crew continued its repair work even after becoming aware that the Hot Work Crew was working approximately 20 feet away and using an oxy-acetylene torch to cut a hole in a pipe. It was unsafe to continue the NL Valve repair job under such circumstances because of the nature of the

NL Valve project and the heightened risk of damage to persons or property from a possible release from Line L6. When the pressure surge occurred, gasoline did indeed escape from Valves G1 and G2 and the vapors ignited, causing a fire that injured one employee and damaged the GANJ Manifold and a nearby vehicle.

Finally, the NL Valve repair job was performed in an unsafe manner insofar as there was inadequate communication and coordination between the two work crews performing maintenance or repairs simultaneously on the GANJ Manifold. The Internal Report found that "employees failed to follow the established maintenance practices of communicating with operations before and after a job. . . ." If the Valve Work Crew had ceased work once it became aware that L6 Line was active and that "hot work" was being performed within close proximity, the Accident would not have occurred.

Proposed Civil Penalty

Under 49 United States Code, § 60122, you are subject to a civil penalty not to exceed \$200,000 per violation per day the violation persists up to a maximum of \$2,000,000 for a related series of violations. For violations occurring prior to January 4, 2012, the maximum penalty may not exceed \$100,000 per violation per day, with a maximum penalty not to exceed \$1,000,000 for a related series of violations. The Compliance Officer has reviewed the circumstances and supporting documentation involved in the above probable violation(s) and has recommended that you be preliminarily assessed a civil penalty of \$500,000 as follows:

<u>Item number</u>	<u>PENALTY</u>
1	\$100,000
2	\$100,000
3	\$100,000
4	\$100,000
5	\$100,000

Proposed Compliance Order

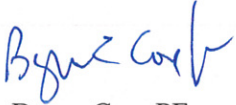
With respect to items 3 and 4 pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Kinder Morgan. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b). If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order.

Please submit all correspondence in this matter to Byron Coy, PE, Director, PHMSA Eastern Region, 820 Bear Tavern Road, Suite 103, W. Trenton, NJ 08628. Please refer to **CPF 1-2013-5004** on each document you submit, and please whenever possible provide a signed PDF copy in electronic format. Smaller files may be emailed to Byron.Coy@dot.gov. Larger files should be sent on a CD accompanied by the original paper copy to the Eastern Region Office.

Sincerely,

A handwritten signature in blue ink, appearing to read "Byron Coy".

Byron Coy, PE
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Proposed Compliance Order*
Response Options for Pipeline Operators in Compliance Proceedings

PROPOSED COMPLIANCE ORDER

Pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Kinder Morgan Liquids Terminals, LLC (Kinder Morgan) a Compliance Order (Order) incorporating the following remedial requirements to ensure the compliance of Kinder Morgan with the pipeline safety regulations:

1. In regard to Item Number 3 of the Notice, Kinder Morgan must develop procedures for valve operation, maintenance, and repair in accordance with §195.422 which incorporate “lessons learned” from the accident that occurred on March 14, 2011 at the Carteret Terminal. The procedures must provide for the repair of all types of valves¹ located at the Carteret Terminal, including the incorporation of manufacturers’ specific recommended practices. Thus, the procedure shall include instructions to ensure safety while working on all types of valves.²
2. In regard to Item Number 4 of the Notice, Kinder Morgan must perform a comprehensive surge analysis of the GANJ Manifold at the Carteret Terminal. Based on the results, Kinder Morgan must make any and all necessary modifications to the GANJ Manifold to account for potential surges. Then, Kinder Morgan must test and verify that the GANJ Manifold does not exceed 110 percent of the operating pressure limit established under the maximum operating pressure during surges or other variations from normal operations.
3. A summary report of any and all documents demonstrating completion of the requirements set forth in this Order must be submitted within 150 days after receipt of a Final Order to the Mr. Byron Coy, Director, Eastern Region, Pipeline and Hazardous Materials Safety Administration, Suite 103, 820 Bear Tavern Road, West Trenton, NJ 08628.
4. It is requested (not mandated) that Kinder Morgan maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Byron Coy, Director, Eastern Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.

¹ U.S. Department of Transportation jurisdictional valves

² Id.